

C1 wherein  $\rho_{t_m} = v_{t_m} t_{t_m}$  is the modulation factor which corresponds to the physical time delay  $t_{t_m}$ ,  $\rho_{f_{b_m}} = v_{f_{b_m}} t_{f_{b_m}}$  is the modulation factor which corresponds to the specific transducer time delay  $t_{f_{b_m}}$ ,  $v_{t_m}$  and  $v_{f_{b_m}}$  are constants such as the signal propagation velocities,  $a_{0_m}$  is a constant,  $k_p$  and  $k_z$  are the frequency variables,  $n$ ,  $m$ , and  $M$  are integers, and  $N_{m_{p_0}}$ ,  $N_{m_{p_1}}$ ,  $\rho_{0_m}$ , and  $z_{0_m}$  are data parameters.

---

C2 127. (Amended) A method for recognizing a pattern in information and establishing an order formatted pattern in information with respect to standard ordered information, the method comprising:

- a.) obtaining a string comprising a sum of Fourier series from a memory, said string representing information;
- b.) selecting at least two filters from a selected set of filters;
- c.) sampling the string with the filters such that each of the filters produces a sampled Fourier series, each Fourier series comprising a subset of the string;
- d.) modulating each of the sampled Fourier series in Fourier space with the corresponding selected filter such that each filter produces an order formatted Fourier series;
- e.) adding the order formatted Fourier series produced by each filter to form a summed Fourier series in Fourier space;
- f.) obtaining an ordered Fourier series from the memory;
- g.) determining a spectral similarity between the summed Fourier series and the ordered Fourier series;
- h.) determining a probability expectation value based on the spectral similarity;
- i.) generating a probability operand based on the probability expectation value;
- j.) repeating steps b-i until the probability operand has a desired value, when the probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;
- k.) storing the summed Fourier series to an intermediate memory;
- l.) removing the selected filters from the selected set of filters to form an updated set of filters;
- m.) removing the subsets from the string to obtain an updated string;
- n.) selecting an updated filter from the updated set of filters;
- o.) sampling the updated string with the updated filter to form a sampled Fourier series comprising a subset of the string;

cn p.) modulating the sampled Fourier series in Fourier space with the corresponding selected updated filter to form an updated order formatted Fourier series;

q.) recalling the summed Fourier series from the intermediate memory;

r.) adding the updated order formatted Fourier series to the summed Fourier series from the intermediate memory to form an updated summed Fourier series in Fourier space;

s.) obtaining an updated ordered Fourier series from a high level memory;

t.) determining a spectral similarity between the updated summed Fourier series and the updated ordered Fourier series;

u.) determining a probability expectation value based on the spectral similarity;

v.) generating a probability operand based on the probability expectation value;

w.) repeating steps n-v until the probability operand has a desired value or all of the updated filters have been selected from the updated set of filters, when the probability operand has a desired value a pattern in information has been recognized an order formatted pattern in the information has been established;

x.) if all of the updated filters have been selected before the probability operand has a desired value, then clearing the intermediate memory and returning to step b;

y.) if the probability operand has a desired value, then storing the updated summed Fourier series to the intermediate memory;

z.) repeating steps l-y until one of the following set of conditions is satisfied: the updated set of filters is empty, or the remaining subsets of the string of step m.) is nil; and

aa.) storing the Fourier series in the intermediate memory in the high level memory.

189. (Amended) A computer-readable medium according to claim 160, wherein the Fourier series in Fourier space, has a characteristic modulation having a frequency within the band represented by  $e^{-jk_p(\rho_{f_{bm}} + \rho_{im})}$  and is selected from one of:

$$\sum_{m=1}^M \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0m} N_{m_{\rho_0}} N_{m_{z_0}} e^{-jk_p(\rho_{f_{bm}} + \rho_{im})} \sin\left(k_p \frac{N_{m_{\rho_0}} \rho_{0m}}{2} - n \frac{2\pi N_{m_{\rho_0}}}{2}\right) \sin\left(k_z \frac{N_{m_{z_0}} z_{0m}}{2} - n \frac{2\pi N_{m_{z_0}}}{2}\right)$$

and

$$\sum_{m=1}^M \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_m} \frac{4}{\rho_{0_m} z_{0_m}} e^{-jk_p(\rho_{fb_m} + \rho_{tm})} \sin\left(k_p \frac{N_{m\rho_0} \rho_{0_m}}{2} - n \frac{2\pi N_{m\rho_0}}{2}\right) \sin\left(k_z \frac{N_{mz_0} z_{0_m}}{2} - n \frac{2\pi N_{mz_0}}{2}\right)$$

wherein  $\rho_{tm} = v_{tm} t_{tm}$  is the modulation factor which corresponds to the physical time delay  $t_{tm}$ ,  $\rho_{fb_m} = v_{fb_m} t_{fb_m}$  is the modulation factor which corresponds to the specific transducer time delay  $t_{fb_m}$ ,  $v_{tm}$  and  $v_{fb_m}$  are constants such as the signal propagation velocities,  $a_{0_m}$  is a constant,  $k_p$  and  $k_z$  are the frequency variables,  $n$ ,  $m$ , and  $M$  are integers, and  $N_{m\rho_0}$ ,  $N_{mz_0}$ ,  $\rho_{0_m}$ , and  $z_{0_m}$  are data parameters.

229. (Amended) A computer-readable medium according to claim 228, wherein coupling is based on spectral similarity of said Fourier series.

230. (Amended) A computer-readable medium according to claim 228, further comprising adding the associated Fourier series to form a string, and ordering the string.

231. (Amended) A computer-readable medium according to claim 228, wherein the filter is a time delayed Gaussian filter in the time domain.

232. (Amended) A computer-readable medium according to claim 228, wherein the probability distribution is Poissonian.

233. (Amended) A computer-readable medium according to claim 230, wherein the string is selected from one of:

$$\sum_{s=1}^S \sum_{m=1}^{M_s} \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_{s,m}} N_{s,m\rho_0} N_{s,mz_0} \sin\left(\left(k_p - n \frac{2\pi}{\rho_{0_{s,m}}}\right) \frac{N_{s,m\rho_0} \rho_{0_{s,m}}}{2}\right) \sin\left(\left(k_z - n \frac{2\pi}{z_{0_{s,m}}}\right) \frac{N_{s,mz_0} z_{0_{s,m}}}{2}\right)$$

and

$$\sum_{s=1}^S \sum_{m=1}^{M_s} \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_{s,m}} \frac{4}{\rho_{0_{s,m}} z_{0_{s,m}}} \sin\left(\left(k_p - n \frac{2\pi}{\rho_{0_{s,m}}}\right) \frac{N_{s,m\rho_0} \rho_{0_{s,m}}}{2}\right) \sin\left(\left(k_z - n \frac{2\pi}{z_{0_{s,m}}}\right) \frac{N_{s,mz_0} z_{0_{s,m}}}{2}\right)$$

wherein  $a_{0_{s,m}}$  is a constant,  $k_p$  and  $k_z$  are the frequency variables,  $n$ ,  $m$ ,  $s$ ,  $M_s$ , and  $S$  are integers, and  $N_{s,m\rho_0}$ ,  $N_{s,mz_0}$ ,  $\rho_{0_{s,m}}$ , and  $z_{0_{s,m}}$  are data parameters.

C4  
234. (Amended) A computer-readable medium according to claim 233, wherein each of the data parameters  $N_{m\rho_0}$  and  $N_{mz_0}$  of the Fourier series component is proportional to the rate of change of the physical characteristic and each of the data parameters  $\rho_{0_m}$  and  $z_{0_m}$  of each Fourier component is inversely proportional to the amplitude of the physical characteristic.

235. (Amended) A computer-readable medium according to claim 233, wherein each of the data parameters  $N_{m\rho_0}$  and  $N_{mz_0}$  of the Fourier series component is proportional to the amplitude of the physical characteristic and each of the data parameters  $\rho_{0_m}$  and  $z_{0_m}$  of each Fourier component is inversely proportional to the rate of change of the physical characteristic.

236. (Amended) A computer-readable medium according to claim 233, wherein each of the data parameters  $N_{m\rho_0}$  and  $N_{mz_0}$  of the Fourier series component is proportional to the duration of a signal response of each transducer and each of the data parameters  $\rho_{0_m}$  and  $z_{0_m}$  of each Fourier component is inversely proportional to the physical characteristic.

237. (Amended) A computer-readable medium on which is stored a computer program for providing a method for recognizing a pattern in information and establishing an order formatted pattern in information with respect to standard ordered information, the computer program comprising instructions which, when executed by a computer, perform the steps of:

- a.) obtaining a string comprising a sum of Fourier series from a memory, said string representing information;
- b.) selecting at least two filters from a selected set of filters;
- c.) sampling the string with the filters such that each of the filters produces a sampled Fourier series, each Fourier series comprising a subset of the string;
- d.) modulating each of the sampled Fourier series in Fourier space with the corresponding selected filter such that each filter produces an order formatted Fourier series;

- c4
- e.) adding the order formatted Fourier series produced by each filter to form a summed Fourier series in Fourier space;
  - f.) obtaining an ordered Fourier series from the memory;
  - g.) determining a spectral similarity between the summed Fourier series and the ordered Fourier series;
  - h.) determining a probability expectation value based on the spectral similarity;
  - i.) generating a probability operand based on the probability expectation value;
  - j.) repeating steps b-i until the probability operand has a desired value, when the probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;
  - k.) storing the summed Fourier series to an intermediate memory;
  - l.) removing the selected filters from the selected set of filters to form an updated set of filters;
  - m.) removing the subsets from the string to obtain an updated string;
  - n.) selecting an updated filter from the updated set of filters;
  - o.) sampling the updated string with the updated filter to form a sampled Fourier series comprising a subset of the string;
  - p.) modulating the sampled Fourier series in Fourier space with the corresponding selected updated filter to form an updated order formatted Fourier series;
  - q.) recalling the summed Fourier series from the intermediate memory;
  - r.) adding the updated order formatted Fourier series to the summed Fourier series from the intermediate memory to form an updated summed Fourier series in Fourier space;
  - s.) obtaining an updated ordered Fourier series from a high level memory;
  - t.) determining a spectral similarity between the updated summed Fourier series and the updated ordered Fourier series;
  - u.) determining a probability expectation value based on the spectral similarity;
  - v.) generating a probability operand based on the probability expectation value;
  - w.) repeating steps n-v until the probability operand has a desired value or all of the updated filters have been selected from the updated set of filters, when the probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;

x.) if all of the updated filters have been selected before the probability operand has a desired value, then clearing the intermediate memory and returning to step b;

cy y.) if the probability operand has a desired value, then storing the updated summed Fourier series to the intermediate memory;

z.) repeating steps l-y until one of the following set of conditions is satisfied: the updated set of filters is empty, or the remaining subsets of the string of step m.) is nil; and

aa.) storing the Fourier series in the intermediate memory in the high level memory.

cn 240. (Amended) A computer-readable medium according to claim 237, wherein inputted information comprises data and an input context, said input context mapping on a one to one basis to a physical context, said physical context being a relationship between physical characteristics represented by said inputted information.

ce 294. (Amended) A method for recognizing a pattern in information and establishing an order formatted pattern in information with respect to standard ordered information, the method comprising:

a.) obtaining a string comprising a sum of Fourier series from a memory, said string representing information;

b.) selecting at least two filters from a selected set of filters;

c.) sampling the string with the filters such that each of the filters produces a sampled Fourier series, each Fourier series comprising a subset of the string;

d.) modulating each of the sampled Fourier series in Fourier space with the corresponding selected filter such that each filter produces an order formatted Fourier series;

e.) adding the order formatted Fourier series produced by each filter to form a summed Fourier series in Fourier space;

f.) obtaining an ordered Fourier series from the memory;

g.) determining a spectral similarity between the summed Fourier series and the ordered Fourier series;

h.) determining a probability expectation value based on the spectral similarity;

CP

- i.) generating a probability operand based on the probability expectation value;
- j.) repeating steps b-i until the probability operand has a desired value, when said probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;
- k.) storing the summed Fourier series to an intermediate memory;
- l.) removing the selected filters from the selected set of filters to form an updated set of filters;
- m.) removing the subsets from the string to obtain an updated string;
- n.) selecting an updated filter from the updated set of filters;
- o.) sampling the updated string with the updated filter to form a sampled Fourier series comprising a subset of the string;
- p.) modulating the sampled Fourier series in Fourier space with the corresponding selected updated filter to form an updated order formatted Fourier series;
- q.) recalling the summed Fourier series from the intermediate memory;
- r.) adding the updated order formatted Fourier series to the summed Fourier series from the intermediate memory to form an updated summed Fourier series in Fourier space;
- s.) obtaining an updated ordered Fourier series from a high level memory;
- t.) determining a spectral similarity between the updated summed Fourier series and the updated ordered Fourier series;
- u.) determining a probability expectation value based on the spectral similarity;
- v.) generating a probability operand based on the probability expectation value;
- w.) repeating steps n-v until the probability operand has a desired value or all of the updated filters have been selected from the updated set of filters, when the probability operand has a desired value a pattern in information has been recognized and an order information pattern in the information has been established;
- x.) if all of the updated filters have been selected before the probability operand has a desired value, then clearing the intermediate memory and returning to step b;
- y.) if the probability operand has a desired value, then storing the updated summed Fourier series to the intermediate memory;
- z.) repeating steps l-y until one of the following set of conditions is satisfied: the updated set of filters is empty, or the remaining subsets of the string of step m.) is nil; and

CP

aa.) storing the Fourier series in the intermediate memory in the high level memory, said updated summed Fourier series representing said plurality of Fourier series in said strings ordered according to a plurality of associations between the information of the plurality of order formatted subset Fourier series and the at least one ordered Fourier series from high level memory.

#### EXPLANATION OF AMENDMENT:

The claims have been amended as shown by [deletions] and insertions.

79. (Amended) A method according to claim [69] 51, wherein the Fourier series in Fourier space, has a characteristic modulation having a frequency within the band represented by  $e^{-jk_p(\rho_{fb_m} + \rho_{tm})}$  and is selected from one of:

$$\sum_{m=1}^M \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_m} N_{m_{\rho_0}} N_{m_{z_0}} e^{-jk_p(\rho_{fb_m} + \rho_{tm})} \sin\left(k_p \frac{N_{m_{\rho_0}} \rho_{0_m}}{2} - n \frac{2\pi N_{m_{\rho_0}}}{2}\right) \sin\left(k_z \frac{N_{m_{z_0}} z_{0_m}}{2} - n \frac{2\pi N_{m_{z_0}}}{2}\right)$$

and

$$\sum_{m=1}^M \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_m} \frac{4}{\rho_{0_m} z_{0_m}} e^{-jk_p(\rho_{fb_m} + \rho_{tm})} \sin\left(k_p \frac{N_{m_{\rho_0}} \rho_{0_m}}{2} - n \frac{2\pi N_{m_{\rho_0}}}{2}\right) \sin\left(k_z \frac{N_{m_{z_0}} z_{0_m}}{2} - n \frac{2\pi N_{m_{z_0}}}{2}\right)$$

wherein  $\rho_{tm} = v_{tm} t_{tm}$  is the modulation factor which corresponds to the physical time delay  $t_{tm}$ ,  $\rho_{fb_m} = v_{fb_m} t_{fb_m}$  is the modulation factor which corresponds to the specific transducer time delay  $t_{fb_m}$ ,  $v_{tm}$  and  $v_{fb_m}$  are constants such as the signal propagation velocities,  $a_{0_m}$  is a constant,  $k_p$  and  $k_z$  are the frequency variables,  $n$ ,  $m$ , and  $M$  are integers, and  $N_{m_{\rho_0}}$ ,  $N_{m_{z_0}}$ ,  $\rho_{0_m}$ , and  $z_{0_m}$  are data parameters.

127. (Amended) A method for recognizing a pattern in information and establishing an order formatted pattern in information with respect to standard ordered information, the method comprising:

- a.) obtaining a string comprising a sum of Fourier series from a memory, said string representing information;
- b.) selecting at least two filters from a selected set of filters;
- c.) sampling the string with the filters such that each of the filters produces a sampled Fourier series, each Fourier series comprising a subset of the string;



d.) modulating each of the sampled Fourier series in Fourier space with the corresponding selected filter such that each filter produces an order formatted Fourier series;

e.) adding the order formatted Fourier series produced by each filter to form a summed Fourier series in Fourier space;

f.) obtaining an ordered Fourier series from the memory;

g.) determining a spectral similarity between the summed Fourier series and the ordered Fourier series;

h.) determining a probability expectation value based on the spectral similarity;

i.) generating a probability operand based on the probability expectation value;

j.) repeating steps b-i until the probability operand has a desired value, when the probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;

k.) storing the summed Fourier series to an intermediate memory;

l.) removing the selected filters from the selected set of filters to form an updated set of filters;

m.) removing the subsets from the string to obtain an updated string;

n.) selecting an updated filter from the updated set of filters;

o.) sampling the updated string with the updated filter to form a sampled Fourier series comprising a subset of the string;

p.) modulating the sampled Fourier series in Fourier space with the corresponding selected updated filter to form an updated order formatted Fourier series;

q.) recalling the summed Fourier series from the intermediate memory;

r.) adding the updated order formatted Fourier series to the summed Fourier series from the intermediate memory to form an updated summed Fourier series in Fourier space;

s.) obtaining an updated ordered Fourier series from [the] a high level memory;

t.) determining a spectral similarity between the updated summed Fourier series and the updated ordered Fourier series;

u.) determining a probability expectation value based on the spectral similarity;

v.) generating a probability operand based on the probability expectation value;

w.) repeating steps n-v until the probability operand has a desired value or all of the updated filters have been selected from the updated set of filters, when the

probability operand has a desired value a pattern in information has been recognized an order formatted pattern in the information has been established;

x.) if all of the updated filters have been selected before the probability operand has a desired value, then clearing the intermediate memory and returning to step b;

y.) if the probability operand has a desired value, then storing the updated summed Fourier series to the intermediate memory;

z.) repeating steps l-y until one of the following set of conditions is satisfied: the updated set of filters is empty, or the remaining subsets of the string of step m.) is nil; and

aa.) storing the Fourier series in the intermediate memory in the high level memory.

189. (Amended) A computer-readable medium according to claim [179] 160, wherein the Fourier series in Fourier space, has a characteristic modulation having a

frequency within the band represented by  $e^{-jk_p(\rho_{fb_m} + \rho_{tm})}$  and is selected from one of:

$$\sum_{m=1}^M \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_m} N_{m_{p_0}} N_{m_{z_0}} e^{-jk_p(\rho_{fb_m} + \rho_{tm})} \sin\left(k_p \frac{N_{m_{p_0}} \rho_{0_m}}{2} - n \frac{2\pi N_{m_{p_0}}}{2}\right) \sin\left(k_z \frac{N_{m_{z_0}} z_{0_m}}{2} - n \frac{2\pi N_{m_{z_0}}}{2}\right)$$

and

$$\sum_{m=1}^M \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_p^2}} a_{0_m} \frac{4}{\rho_{0_m} z_{0_m}} e^{-jk_p(\rho_{fb_m} + \rho_{tm})} \sin\left(k_p \frac{N_{m_{p_0}} \rho_{0_m}}{2} - n \frac{2\pi N_{m_{p_0}}}{2}\right) \sin\left(k_z \frac{N_{m_{z_0}} z_{0_m}}{2} - n \frac{2\pi N_{m_{z_0}}}{2}\right)$$

wherein  $\rho_{tm} = v_{tm} t_{tm}$  is the modulation factor which corresponds to the physical time delay  $t_{tm}$ ,  $\rho_{fb_m} = v_{fb_m} t_{fb_m}$  is the modulation factor which corresponds to the specific transducer time delay  $t_{fb_m}$ ,  $v_{tm}$  and  $v_{fb_m}$  are constants such as the signal propagation velocities,  $a_{0_m}$  is a constant,  $k_p$  and  $k_z$  are the frequency variables,  $n$ ,  $m$ , and  $M$  are integers, and  $N_{m_{p_0}}$ ,  $N_{m_{z_0}}$ ,  $\rho_{0_m}$ , and  $z_{0_m}$  are data parameters.

229. (Amended) A computer-readable medium according to claim 228, wherein coupling is based on spectral similarity of said Fourier series.

230. (Amended) A computer-readable medium according to claim 228, further comprising adding the associated Fourier series to form a string, and ordering the string.

231. (Amended) A computer-readable medium according to claim 228, wherein the filter is a time delayed Gaussian filter in the time domain.

232. (Amended) A computer-readable medium according to claim 228, wherein the probability distribution is Poissonian.

233. (Amended) A computer-readable medium according to claim 230, wherein the string is selected from one of:

$$\sum_{s=1}^S \sum_{m=1}^{M_s} \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_\rho^2}} a_{0_{s,m}} N_{s,m\rho_0} N_{s,mz_0} \sin\left(\left(k_\rho - n \frac{2\pi}{\rho_{0_{s,m}}}\right) \frac{N_{s,m\rho_0} \rho_{0_{s,m}}}{2}\right) \sin\left(\left(k_z - n \frac{2\pi}{z_{0_{s,m}}}\right) \frac{N_{s,mz_0} z_{0_{s,m}}}{2}\right)$$

and

$$\sum_{s=1}^S \sum_{m=1}^{M_s} \sum_{n=-\infty}^{\infty} \frac{4\pi}{1 + \frac{k_z^2}{k_\rho^2}} a_{0_{s,m}} \frac{4}{\rho_{0_{s,m}} z_{0_{s,m}}} \sin\left(\left(k_\rho - n \frac{2\pi}{\rho_{0_{s,m}}}\right) \frac{N_{s,m\rho_0} \rho_{0_{s,m}}}{2}\right) \sin\left(\left(k_z - n \frac{2\pi}{z_{0_{s,m}}}\right) \frac{N_{s,mz_0} z_{0_{s,m}}}{2}\right)$$

wherein  $a_{0_{s,m}}$  is a constant,  $k_\rho$  and  $k_z$  are the frequency variables,  $n$ ,  $m$ ,  $s$ ,  $M_s$ , and  $S$  are integers, and  $N_{s,m\rho_0}$ ,  $N_{s,mz_0}$ ,  $\rho_{0_{s,m}}$ , and  $z_{0_{s,m}}$  are data parameters.

234. (Amended) A computer-readable medium according to claim 233, wherein each of the data parameters  $N_{m\rho_0}$  and  $N_{mz_0}$  of the Fourier series component is proportional to the rate of change of the physical characteristic and each of the data parameters  $\rho_{0_m}$  and  $z_{0_m}$  of each Fourier component is inversely proportional to the amplitude of the physical characteristic.

235. (Amended) A computer-readable medium according to claim 233, wherein each of the data parameters  $N_{m\rho_0}$  and  $N_{mz_0}$  of the Fourier series component is proportional to the amplitude of the physical characteristic and each of the data parameters  $\rho_{0_m}$  and  $z_{0_m}$  of each Fourier component is inversely proportional to the rate of change of the physical characteristic.

236. (Amended) A computer-readable medium according to claim 233, wherein each of the data parameters  $N_{m\rho_0}$  and  $N_{mz_0}$  of the Fourier series component is proportional to the duration of a signal response of each transducer and each of the data

parameters  $\rho_{0_m}$  and  $z_{0_m}$  of each Fourier component is inversely proportional to the physical characteristic.

237. (Amended) A computer-readable medium on which is stored a computer program for providing a method for recognizing a pattern in information and establishing an order formatted pattern in information with respect to standard ordered information, the computer program comprising instructions which, when executed by a computer, perform the steps of:

- a.) obtaining a string comprising a sum of Fourier series from a memory, said string representing information;
- b.) selecting at least two filters from a selected set of filters;
- c.) sampling the string with the filters such that each of the filters produces a sampled Fourier series, each Fourier series comprising a subset of the string;
- d.) modulating each of the sampled Fourier series in Fourier space with the corresponding selected filter such that each filter produces an order formatted Fourier series;
- e.) adding the order formatted Fourier series produced by each filter to form a summed Fourier series in Fourier space;
- f.) obtaining an ordered Fourier series from the memory;
- g.) determining a spectral similarity between the summed Fourier series and the ordered Fourier series;
- h.) determining a probability expectation value based on the spectral similarity;
- i.) generating a probability operand based on the probability expectation value;
- j.) repeating steps b-i until the probability operand has a desired value, when the probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;
- k.) storing the summed Fourier series to an intermediate memory;
- l.) removing the selected filters from the selected set of filters to form an updated set of filters;
- m.) removing the subsets from the string to obtain an updated string;
- n.) selecting an updated filter from the updated set of filters;
- o.) sampling the updated string with the updated filter to form a sampled Fourier series comprising a subset of the string;

p.) modulating the sampled Fourier series in Fourier space with the corresponding selected updated filter to form an updated order formatted Fourier series;

q.) recalling the summed Fourier series from the intermediate memory;

r.) adding the updated order formatted Fourier series to the summed Fourier series from the intermediate memory to form an updated summed Fourier series in Fourier space;

s.) obtaining an updated ordered Fourier series from [the] a high level memory;

t.) determining a spectral similarity between the updated summed Fourier series and the updated ordered Fourier series;

u.) determining a probability expectation value based on the spectral similarity;

v.) generating a probability operand based on the probability expectation value;

w.) repeating steps n-v until the probability operand has a desired value or all of the updated filters have been selected from the updated set of filters, when the probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;

x.) if all of the updated filters have been selected before the probability operand has a desired value, then clearing the intermediate memory and returning to step b;

y.) if the probability operand has a desired value, then storing the updated summed Fourier series to the intermediate memory;

z.) repeating steps l-y until one of the following set of conditions is satisfied: the updated set of filters is empty, or the remaining subsets of the string of step m.) is nil; and

aa.) storing the Fourier series in the intermediate memory in the high level memory.

240. (Amended) A computer-readable medium according to claim 237, wherein inputted information comprises data and an input context, said input context mapping on a one to one basis to a physical context, said physical context being a relationship between physical characteristics represented by said inputted information.

294. (Amended) A method for recognizing a pattern in information and establishing an order formatted pattern in information with respect to standard ordered information, the method comprising:

- a.) obtaining a string comprising a sum of Fourier series from a memory, said string representing information;
- b.) selecting at least two filters from a selected set of filters;
- c.) sampling the string with the filters such that each of the filters produces a sampled Fourier series, each Fourier series comprising a subset of the string;
- d.) modulating each of the sampled Fourier series in Fourier space with the corresponding selected filter such that each filter produces an order formatted Fourier series;
- e.) adding the order formatted Fourier series produced by each filter to form a summed Fourier series in Fourier space;
- f.) obtaining an ordered Fourier series from the memory;
- g.) determining a spectral similarity between the summed Fourier series and the ordered Fourier series;
- h.) determining a probability expectation value based on the spectral similarity;
- i.) generating a probability operand based on the probability expectation value;
- j.) repeating steps b-i until the probability operand has a desired value, when said probability operand has a desired value a pattern in information has been recognized and an order formatted pattern in the information has been established;
- k.) storing the summed Fourier series to an intermediate memory;
- l.) removing the selected filters from the selected set of filters to form an updated set of filters;
- m.) removing the subsets from the string to obtain an updated string;
- n.) selecting an updated filter from the updated set of filters;
- o.) sampling the updated string with the updated filter to form a sampled Fourier series comprising a subset of the string;
- p.) modulating the sampled Fourier series in Fourier space with the corresponding selected updated filter to form an updated order formatted Fourier series;
- q.) recalling the summed Fourier series from the intermediate memory;

r.) adding the updated order formatted Fourier series to the summed Fourier series from the intermediate memory to form an updated summed Fourier series in Fourier space;

s.) obtaining an updated ordered Fourier series from [the] a high level memory;

t.) determining a spectral similarity between the updated summed Fourier series and the updated ordered Fourier series;

u.) determining a probability expectation value based on the spectral similarity;

v.) generating a probability operand based on the probability expectation value;

w.) repeating steps n-v until the probability operand has a desired value or all of the updated filters have been selected from the updated set of filters, when the probability operand has a desired value a pattern in information has been recognized and an order information pattern in the information has been established;

x.) if all of the updated filters have been selected before the probability operand has a desired value, then clearing the intermediate memory and returning to step b;

y.) if the probability operand has a desired value, then storing the updated summed Fourier series to the intermediate memory;

z.) repeating steps l-y until one of the following set of conditions is satisfied: the updated set of filters is empty, or the remaining subsets of the string of step m.) is nil; and

aa.) storing the Fourier series in the intermediate memory in the high level memory, said updated summed Fourier series representing said plurality of Fourier series in said strings ordered according to a plurality of associations between the information of the plurality of order formatted subset Fourier series and the at least one ordered Fourier series from high level memory.